

***Acacia melanoxylon***  
**Blackwood acacia**  
**Fabaceae**

*Acacia melanoxylon* is native to Australia. It has a wide ecological tolerance, occurring over an extensive range of soils and climatic conditions (Playford et al., 1993). A tree that can grow up to 15 m in height, *A. melanoxylon* is typically found in disturbed areas (Hickman, 1993).

Acacias are common ornamental species in New Zealand and represent a small 'alternative' hardwood resource (Kay, 1994). Most rely on soil-stored seeds which remain viable for a considerable period. *Acacia melanoxylon* has a viable soil-stored seed-life of over 50 years (Kay, 1994). Kay (1994) notes that *A. melanoxylon* has the potential to become as persistent as gorse (*Ulex europaeus*) in the New Zealand landscape. In a test of competitive aggressiveness, Bi and Turvey (1994) found that *A. melanoxylon* ranked first, before *Eucalyptus regnans* and *Pinus radiata* which are both considered invasive species. Low vegetative diversity in the understory of *A. melanoxylon* is most likely due to phenolic compounds released in the litter decomposition process, which can act to inhibit germination and growth of other species (Souto et. al., 1994).

As with other invasive species that are members of the legume family, the success of *A. melanoxylon* has been attributed to its ability to fix nitrogen. Rates of N-fixation in *Acacia* spp. range from 0.1 to 32 kg ha<sup>-1</sup> year<sup>-1</sup> (references in Hamilton et al., 1993), depending on the density of plants. Following prescribed fire, however, Hamilton et al. (1993) report that N-fixation rates are as low as 0.005-0.116 kg ha<sup>-1</sup> year<sup>-1</sup> in newly established stands of seedlings.

Kay (1994) suggests that seed predation by introduced organisms could lessen the spread of invasive tree species and may be the only acceptable method of control in environmentally sensitive areas, although the author does not cite specific cases where seed-destroying agents have caused significant seed losses. The eastern Australian gall wasp *Trichilogaster acaciaelongifoliae* has been successfully used to reduce the reproductive potential of the congener *Acacia longifolia* in South Africa. Not surprisingly, this plant galling insect has expanded its host range in S. Africa to include *Acacia melanoxylon* (Dennil et al., 1993). Despite the ability of *T. acaciaelongifoliae* to use *A. melanoxylon* as a host, however, the results of Dennil et al. (1993) show that the wasp may not reduce the growth or reproduction of the host plant significantly.

**Literature cited:**

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